

I Claim:

1. A method for providing wireless data communications between a mobile unit and an access point of a network and between said mobile unit and at least one peripheral device, comprising:

providing said mobile unit with a data communications device, said device including an interface to a host processor of said mobile unit, a data communications digital processor, including a control program and a radio transmitter and receiver;

operating said data communications device in a first WLAN mode to associate with said access point and engage in data communications with said network via said access point;

operating said data communications device in a second personal area communications mode, wherein said data communications device communicates with said at least one peripheral device.

2. A method as specified in claim 1 wherein said data communications device operating in said first WLAN mode uses a first communications protocol and said data communications device operating in said second personal area communications mode communicates with said at least one peripheral device using a modification of said first communications protocol.

3. A method as specified in claim 1 wherein said second mode includes operating said data communications device as a master device and permanently associating with said at least one peripheral device.

4. A method as specified in claim 1 wherein operating said data communications device in said second mode includes operating said radio transmitter at a selected power level lower than a power level used for operating in said first data communications mode.

5. A method as specified in claim 1 further wherein said control program is arranged to operate said data communications device in said first and said second modes.

6. A method as specified in claim 1 wherein operating said data communications device in said second mode includes re-associating with said at least one peripheral device.

7. A method as specified in claim 1 wherein said data communication device includes a power saving operational mode wherein said device is inactive for selected periods of time and wherein said control program includes instructions to cause said data communications device to synchronize said selected periods of time with said peripheral device.

8. A system for providing wireless data communications, comprising:  
at least one access point connected to at least one computer for providing wireless data communications between said at least one computer and at least one mobile unit, said access point using a first data communications protocol to receive association requests from mobile units and to form one or more associations with mobile units for data

communications therewith;

at least one mobile unit including a host processor and a first data communications device, said first data communications device including a first data communications digital processor having a first control program and a first radio for sending and receiving data;

at least one peripheral device including a second data communications device, said second data communications device including a second data communications digital processor having a second control program and a second radio;

wherein said first control program is arranged to send association requests to access points using said first radio and to provide data communications to and from said computer via at least one access point connected thereto.

9. A system as specified in claim 8 wherein said access point acts as a master device and permanently associates with said at least one peripheral device.

10. A system as specified in claim 8 wherein said first control program includes an initiating program whereby said first data communication device receives initiation requests from said second data communications device and forms a permanent association therewith using a modification of said first communication protocol.

11. A system as specified in claim 8 wherein said first control program includes a first reassociation program whereby said first communication device receives reassociation requests from said at least one peripheral device permanently associated

therewith, and whereby said first communication device thereafter engages in data communications with said at least one peripheral device.

12. A system as specified in claim 11 wherein said first reassociation program is operative when said mobile unit is powered up and wherein said at least one peripheral device has previously become permanently associated with said first communication device.

13. A system as specified in claim 11 wherein said second control program includes a second reassociation program, and wherein said second reassociation program is operative to cause said second data communications device to send reassociation requests when said at least one peripheral device is powered up and wherein said at least one peripheral device has previously become permanently associated with said first communication device.

14. A system as specified in claim 8, wherein said second control program includes a network communication program to cause said at least one peripheral device to become associated with an access point connected to a network including said at least one computer and to engage in data communications using said first communications protocol.

15. A system as specified in claim 14 wherein said first control program is arranged to cause said first data communications device to communicate directly to said peripheral device when said first communications device is in direct communication with

said second communication device and to communicate with said second communication device via said network when said first communication device is not in direct communication with said second communication device.

16. A system as specified in claim 14 wherein said second data communications device includes a radio transmitter arranged to transmit at a first higher power level when communicating with an access point and at a second lower power level when communicating directly with an associated mobile unit.

17. A system as specified in claim 11 wherein said first data communications device includes a radio transmitter arranged to transmit at a first higher power level when communicating with said at least one access point using said first data communications protocol and to transmit at a second lower power level when communicating directly with an associated peripheral device.

18. A mobile unit including a host processor and a data communications device, said data communications device including a data communications digital processor having a control program and a radio for sending and receiving data, wherein said control program is arranged to send association requests to access points according to a first data communications protocol using said radio and to provide data communications to and from a computer via at least one access point connected thereto, and wherein said control program includes an initiating program whereby said data communication device

receives initiation requests from a peripheral device and forms a permanent association therewith using a modification of said first data communication protocol.

19. A mobile unit as specified in claim 18 wherein said control program includes a reassociation program whereby said communication device receives reassociation requests from said peripheral device permanently associated therewith, and whereby said first communication device thereafter engages in data communications with said peripheral device.

20. A mobile unit as specified in claim 19 wherein said reassociation program is operative when said mobile unit is powered up.

21. A peripheral device including a data communications device, said data communications device including a data communications digital processor having a control program and a radio, wherein said control program is arranged to cause said data communications device to permanently associate with a data communications device on a mobile unit and conduct data communications therewith.

22. A peripheral device as specified in claim 21 wherein said control program is further arranged to cause said communications device to send reassociation requests and to reassociate with said mobile unit communications device.

23. A peripheral device as specified in claim 22 wherein said control program is arranged to cause said communications device to permanently associate with said

mobile unit communications device upon initial operation and to send said reassociation requests upon subsequent power-up of said peripheral device.

24. A peripheral device as specified in claim 23 wherein said control program is arranged to send said reassociation requests in response to a beam signal from said mobile unit after it fails to receive data communications signals from said mobile unit.

25. A peripheral device as specified in claim 21 wherein said control program is further arranged to cause said communication device to associate with an access point of a network.